

## WHAT IS CLAIMED IS:

1. A modular method of modeling a power plant, the power plant comprising a plurality of major components including at least one of a gas turbine, a heat recovery steam generator, a steam turbine, and a condenser/cooling tower, said method comprising:

selecting a major component module model from a library of component module models for each major component of the power plant, each major component module representing a power plant major component of a unique configuration;

inputting initial model information into a database for the selected modules, the initial model information including at least one of operating parameters, design data, convergence criteria, and a maximum number of passes; and

running the modular model by running each selected module and enabling data exchange between the selected modules.

2. A method in accordance with Claim 1 wherein said inputting initial model information comprises inputting initial model information into a spreadsheet associated with each selected module.

3. A method in accordance with Claim 1 wherein said running the modular model comprises running the modular model by running each selected module in succession and passing the results from a module to the next module in succession.

4. A method in accordance with Claim 3 wherein said running each selected module in succession comprises running each selected module in a predetermined order.

5. A method in accordance with Claim 1 further comprising creating a library of major component module models.

6. A modular method of modeling a power plant having a plurality of components, said method comprising:

selecting at least two component module models from a library of component modules, each component module representing a power plant component of a unique configuration;

inputting initial model information into a database for the selected modules, the initial model information including at least one of operating parameters, design data, convergence criteria, and a maximum number of passes; and

running the modular model by running each selected module and exchanging data between the selected modules.

7. A method in accordance with Claim 6 wherein said inputting initial model information comprises inputting initial model information into a spread sheet associated with each selected module.

8. A method in accordance with Claim 6 wherein said running the modular model comprises running the modular model by running each selected module in succession and passing the results from a module to the next module in succession.

9. A method in accordance with Claim 8 wherein said running each selected module in succession comprises running each selected module in a predetermined order.

10. A method in accordance with Claim 6 further comprising creating a library of component module models.

11. A modular method of modeling a power plant, the power plant comprising a plurality of major components including at least one of a gas turbine, a heat recovery steam generator, a steam turbine, and a condenser/cooling tower, said method comprising:

creating a power plant model by selecting a major component module model from a library of component module models for each major component of the power plant, each major component module representing a power plant major component of a unique configuration;

linking the selected modules together to enable data exchange between modules;

inputting initial model information into a database for the selected modules, the initial model information including at least one of operating parameters, design data, convergence criteria, and a maximum number of passes; and

running the modular model by running each selected module and exchanging data between the selected modules.

12. A method in accordance with Claim 11 wherein said inputting initial model information comprises inputting initial model information into a spread sheet associated with each selected module.

13. A method in accordance with Claim 11 wherein said running the modular model comprises running the modular model by running each selected module in succession and passing the results from a module to the next module in succession.

14. A method in accordance with Claim 13 wherein said running each selected module in succession comprises running each selected module in a predetermined order.

15. A method in accordance with Claim 11 further comprising creating a library of major component module models.

16. A power plant modular modeling system comprising a database operationally coupled to a computer, said database comprising a library of power plant major component module models, each major component module representing a power plant major component of a unique configuration, said computer configured to:

create a power plant model by selecting a major component module model from the library of component module models for each major component of the power plant;

link the selected modules together to enable data exchange between modules;

receive initial model information from a user for the selected modules, the initial model information including at least one of operating parameters, design data, convergence criteria, and a maximum number of passes; and

run the modular model by running each selected module including exchanging data between the selected modules.

17. A system in accordance with Claim 16 wherein said computer is further configured to store the initial model information in a spread sheet associated with each selected module.

18. A system in accordance with Claim 16 wherein said computer is further configured to run the modular model by running each selected module in succession and passing the results from a module to the next module in succession.

19. A system in accordance with Claim 18 wherein said computer is further configured to run each selected module in a predetermined order.